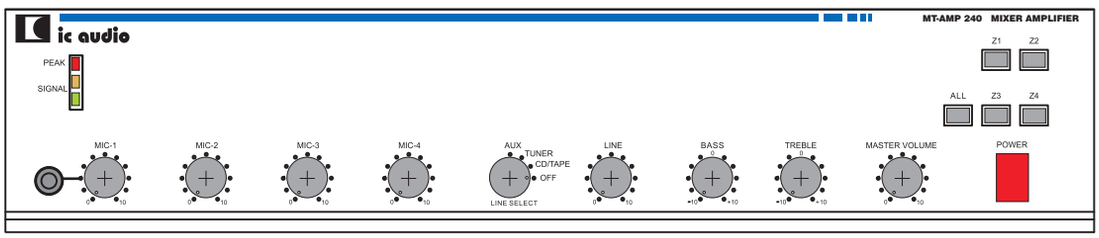
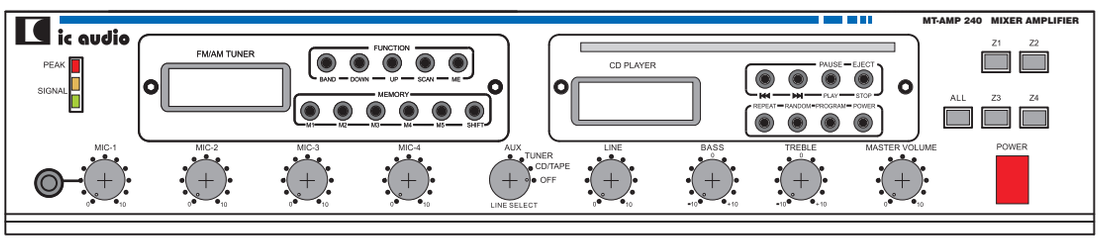
User manual

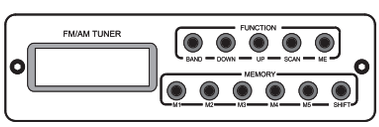
MIXER AMPLIFIER MT-AMP 240



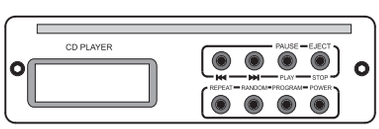
MIXER AMPLIFIER MT-AMP 240 CDT



Tuner Module



CD Module

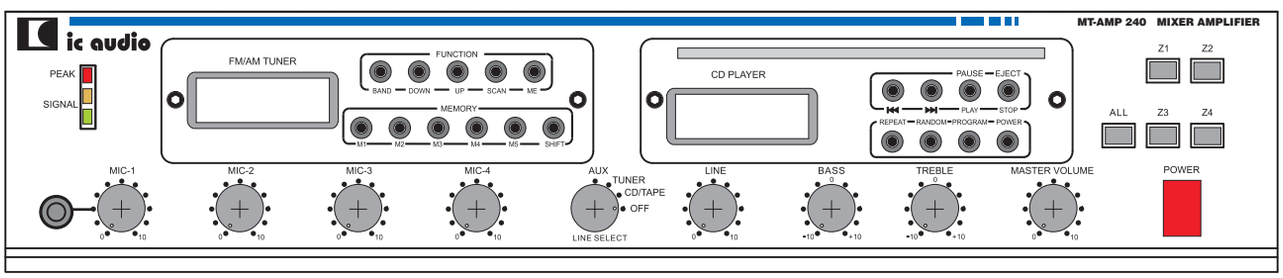


... to make people listen

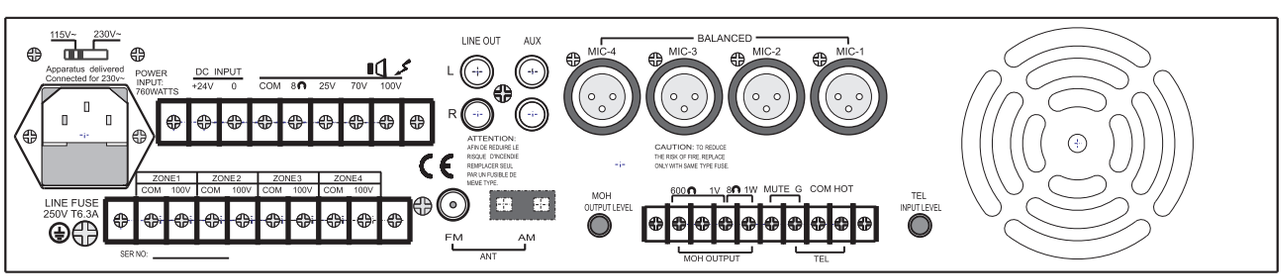
ic audio

Status 06/2004

Mixer-Amplifier - Front -



Mixer-Amplifier - Rear -



Content

Preperation

Unpacking 5

Safety Instructions 5

General Information 5

Cooling 6

Desktop Mounting 6

Special Characteristics

Paging Microphone 7

Output Function 7

Common Function 7

Inputs 7

Outputs 7

Device Functions -Front side-

LED - Display 9

ON/OFF -Switch 9

Zoning 9

VU-Display 10

Microphone Input 10

Microphone Controller 11

LINE-Controller, Switch AUX/CD 11

Controller Bass and Treble 12

Controller Master 12

CD-PLAYER and Tuner 13

Device Functions - Rear Side -

115V and 230V Mains Connection 15

24V Battery Connection 15

100V/8Ω Speaker Output 16

Aerial Connection 17

LINE OUT 18

LINE IN 19

Priorities 20

Telephone Input 21

Chime 21

MONITOR OUTPUT 22

Top view of all functions 23

Further Information

Technical Specifications 25

Block Plugging Diagram 26

Index 27

Preperation

- Unpacking
- Safety Instructions
- General Information
- Cooling
- Desktop Mounting

Unpacking

Please note the unpacking instructions

Safety Instructions

Please note the safety instructions before connecting the MT-AMP 240

General Information

Instructions for the installation

Cooling

Please note the ventilation - cooling guidelines

Desktop Mounting

Please note the positioning of the Mixer - Amplifier

Preperation

Unpacking

Please verify if the following parts were delivered:

- line cord
- Mounting foots pre-assembled

Safety instructions

The wires of the main power line have the following colours:

GREEN and YELLOW: **(E)**
BLUE: **(N)**
BROWN : **(L)**

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green and yellow must be connected to the terminal which is marked by the letter E or by the safety earth symbol or coloured green and yellow. The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
If a 13 Amp (B.S.1363) plug or any other type of plug is used,a 5 Amp fuse must be fitted either in the plug or at the distribution board.

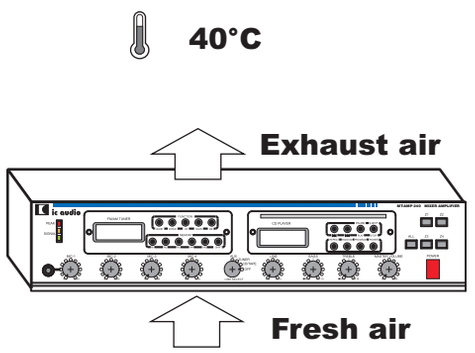
General Information

- DO NOT run microphone cables near mains, data, telephone or 100V line cables.
- DO NOT run 100V line cables near data, telephone or other low voltage cables.
- DO NOT exceed 90% of the amplifiers output power when using 100V line (speech only).
- DO NOT exceed 70% of the amplifiers output power when using 100V line (high level background music).
- DO NOT use re-entrant horn loudspeakers for background music unless the loudspeaker has been specifically designed for this purpose.
- AVOID jointing the microphone cable, when this is unavoidable make sure a good screened connector is used, e.g. XLR.
- ALWAYS use a balanced or floating low impedance microphone terminating into a balanced input on long microphone cable runs.
- ALWAYS use a mains grade double insulated cable for the loudspeaker cable runs.
- ENSURE that all loudspeakers are in-phase.
- ENSURE that there are no short circuits on the loudspeaker line before connecting to the amplifier.

Preperation

Cooling

The mixer amplifer pulls fresh air through the small holes in the bottom sheet and pushes the exhaust air through the long holes in the top sheet. Please make sure that the internal space of the rack system is cooling and you have a room maximum temperature of 40°C..
We recommend to install a cooling system at the rear site of the racksystem to support the transport the exhaust air in the racksystem.

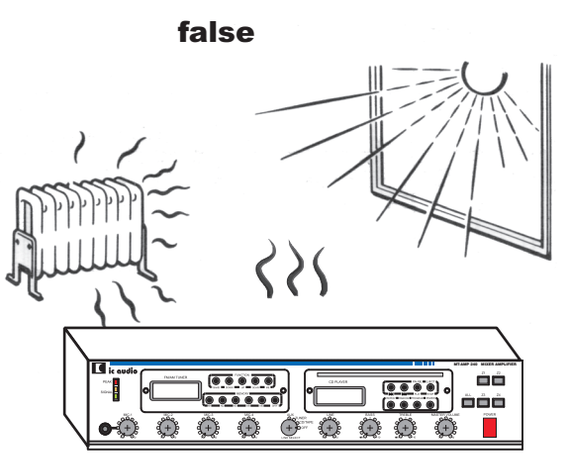


Desktop Mounting

Put the Mixer Amplifier in a position with enough space enough fresh air to minimise the heat in the system.

Do not place the Mixer Amplifier close to of heat sources or a heater.

Do not expose the Mixer Amplifier sunlight or heavy dust.



Special Characteristics

- Paging Microphone Functions
- Output Function
- Common Function
- Inputs
- Outputs

Paging Microphone Functions

- 4 Microphone inputs with different Priorities
- 1 AUX

Output Function

- 4 split Output Zones
- Music muting
- Pre-Amplifier Output

Common Function

- 115V and 230V Mains Connection
- 24V Battery Connection
- Monitor Output
- CD - Tuner Mode
- 4 Zones switchable

Inputs

- AUX
- 4 Microphones
- Telephone/Emergency Connection

Outputs

- 100V - Entire Speakers
- 70V - Entire Speakers
- 25V - Entire Speakers
- 8 ohm - Entire Speakers
- 100V - Speakers of the first Zone
- 100V - Speakers of the second Zone
- 100V - Speakers of the third Zone
- 100V - Speakers of the fourth Zone
- LINE OUT
- 600ohm - Monitor
- 1V - Monitor
- 8ohm - Monitor
- 1Watt - Monitor

Device Functions
- Front side -

- LED - Display
- On/Off - switch
- Zoning
- VU-Display
- Microphone Input MIC 1
- Microphone Controller
- LINE - Controller
  Switch AUX/CD/Tuner
- Controller Bass and Treble
- CD-Player and Tuner
- Controller Master

LED - Display

Display for the activation

ON/OFF - Switch

Setting - up the Mixer-Amplifier

Zoning

Choosing the Output Zone

VU-Display

Shows the saturation degree of the Mixer Amplifier

Microphone Input MIC 1

Connecting a microphone

Microphone Controller

Controller for the Microphone volume

LINE-Controller, Switch AUX/CD

Volume Control of the acoustic signal source

Bass and Treble Controller

Control of the high and deep frequency

CD-Player & Tuner

Using the optional items

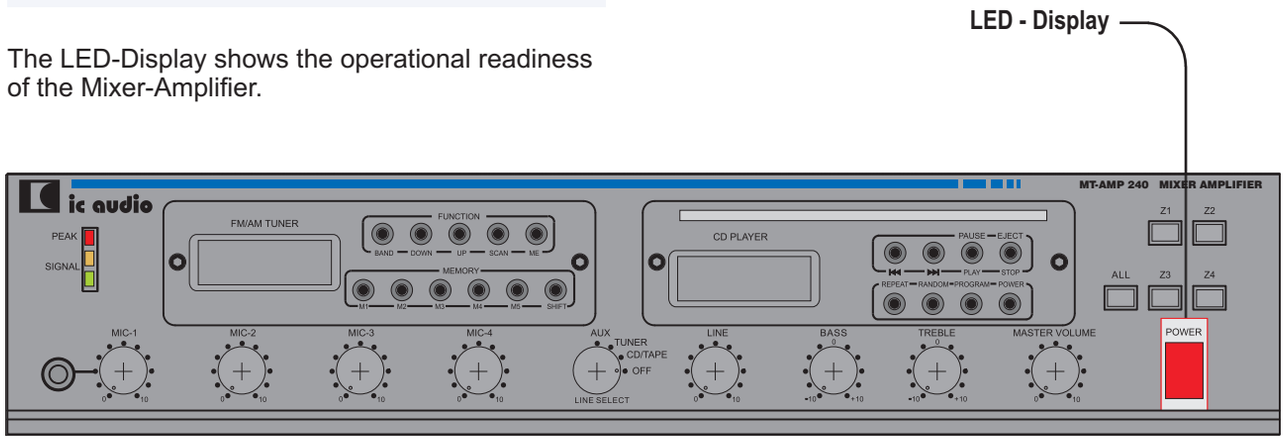
Controller Master

Control of all Signals

Device Functions
- Front side .

LED - Display

The LED-Display shows the operational readiness of the Mixer-Amplifier.

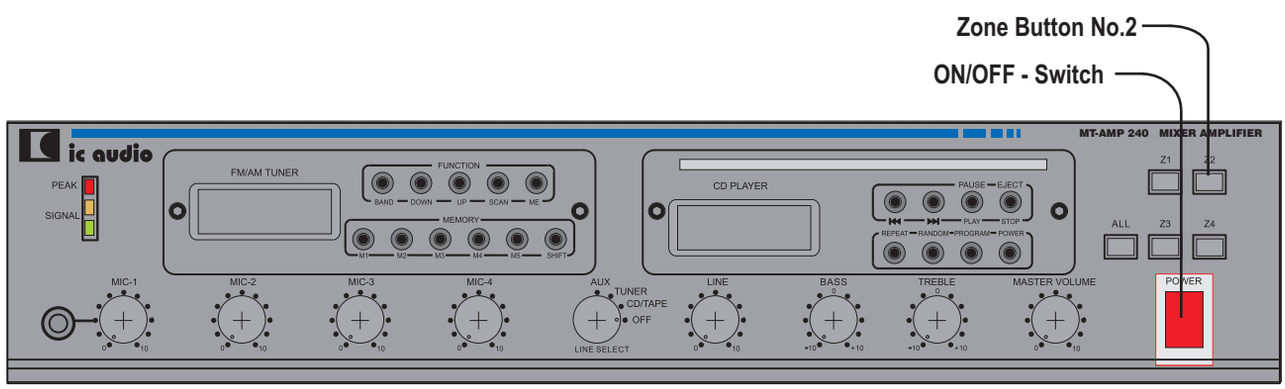


ON/OFF - Switch

With this switch you turn on the apparat.
Position I = apparat is on
Position 0 = apparat is off
After turning the machine on, the LED is shining blue. Before turning the machine on, the Master controller should be set to a low volume.

Zoning

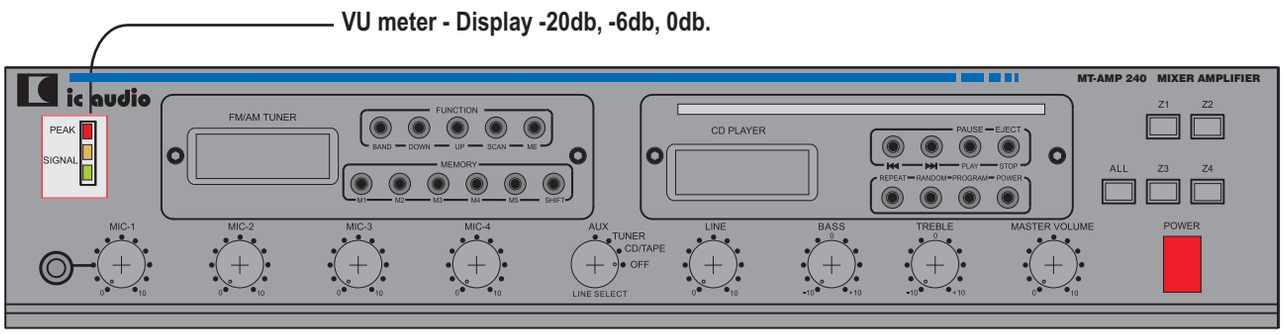
In addition to the normal 100V line output there are two sets of 100V line terminals for 4 Zones which can be selected using the push buttons on the front panel.



Device Functions
- Frontside -

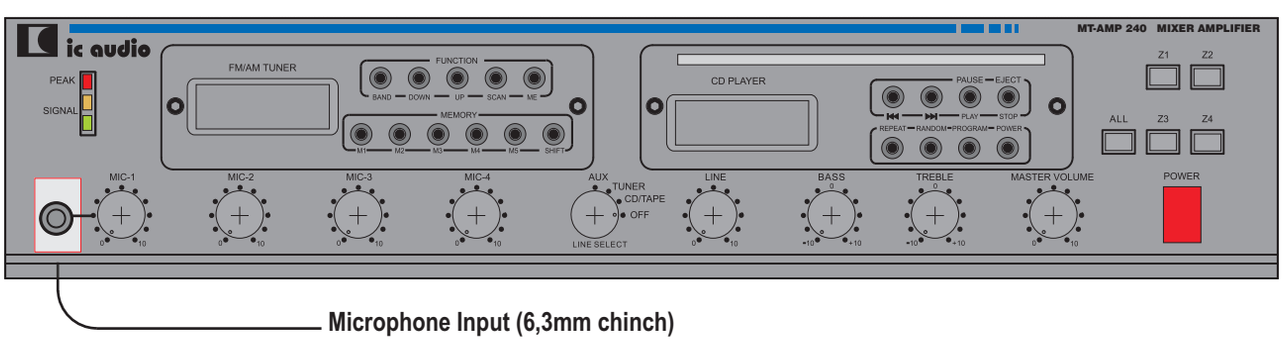
VU - Display

The VU-Display shows the saturation degree of the Mixer Amplifier. The green LED's indicates the level which can be run continously without any interferences. The red LED is iluminated at the full saturation degree only. This level is not appropriate for enduring operation.



Microphone Input

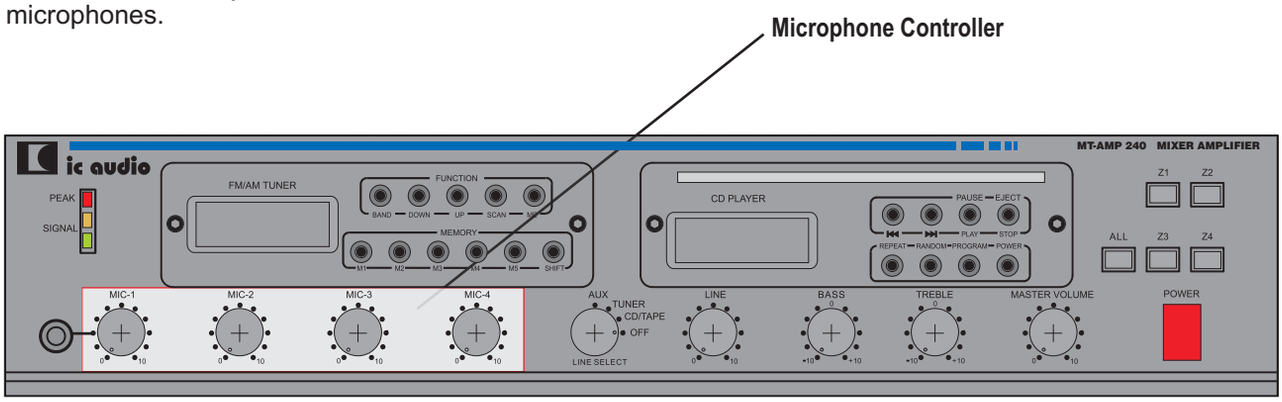
The first microphone MIC1 is prior to all others. MIC1 being in use automatically gates all other microphones. If music is hooked up to the system while an announcement is being made, the gate shuts of the music so that with the specific desktop microphone the announcement signal can go through. This setting will remain until the announcement has ended.
Then then the music automatically fades back in.



Device Functions
- Frontside -

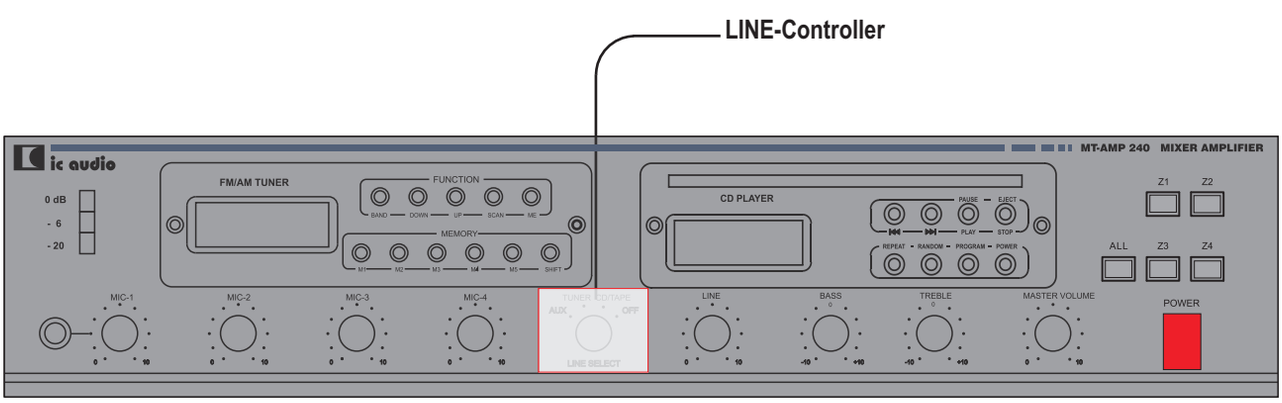
Microphone Controller

With this controller you can set the volume of the microphones.



LINE-Controller, Switch AUX/CD

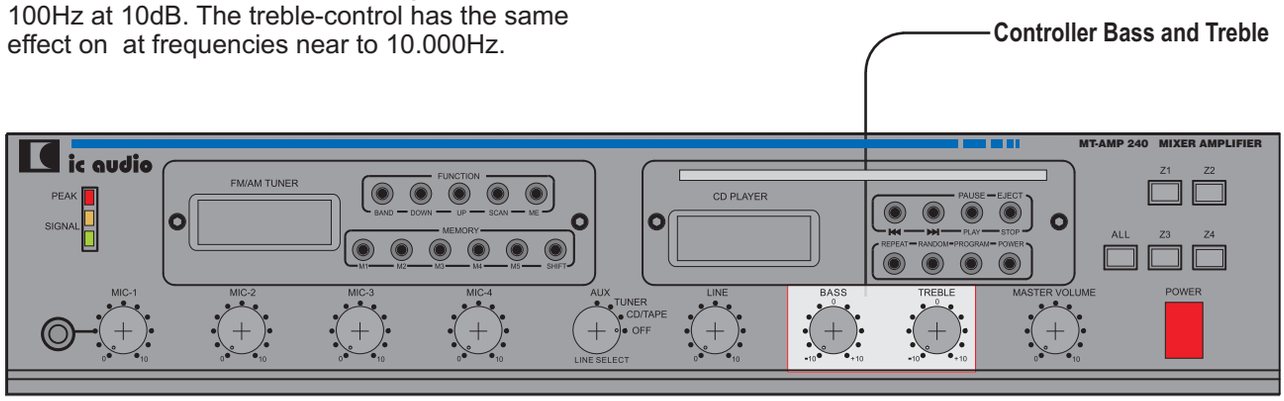
The connected Signal Sources can be controlled by the LINE - Switch. This could be a built-in CD-Player, a optional Tape Deck or a built-in Tuner.



Device Functions
- Frontside -

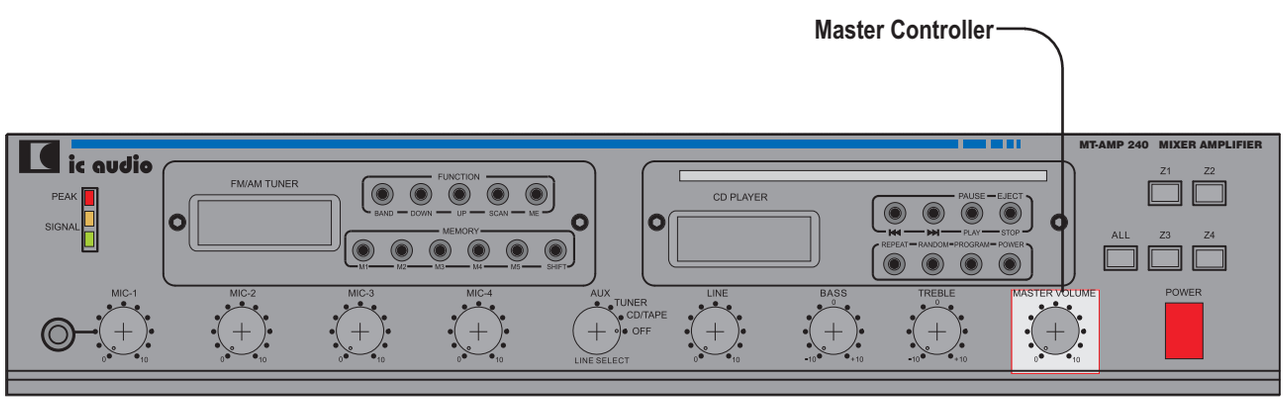
Bass and Treble Controller

With this control you can adjust the reproduction of deep and high frequencies.
The bass control lifts or lowers frequencies near to 100Hz at 10dB. The treble-control has the same effect on at frequencies near to 10.000Hz.



Master Controller

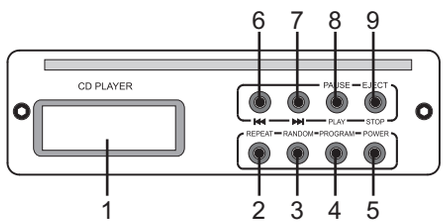
The master control drives the volume of all signals being processed by the amplifier.
Signals of the **TEL/EMER**gency input excepted are. They can be adjusted at the Rearside of the Mixning Amplifier.



Device Functions
- Frontside -
CD-Player and Tuner are optional items

CD Operation

1. Select CD mode with LINE select switch.
2. Press Power key on CD-Player
3. Load disc into player and Play starts automatically
4. Press Pause key and the play will be suspended.
   Press Pause key to resume play.
5. Press the Next keys (6+7) to select tracks
6. Press the Random key, random appears in the display and tracks will be played out of the sequence.
7. Press the Repeat key one time and the current track is repeated. When the key is pressed twice the whole disc will be repeated. To cancel these functions press the Repeat key again.
8. Programming the CD-Player in STOP mode:
   (a) Press the Program key
   (b) Use the Next- or Previous key to select a track
   (c) Press the Repeat key to memorise the selected track in your program. Repeat stages (b) and (c) to program a maximum of 20 tracks.
   (d) Press the Play key to start the program. The program repeats itself until the CD-Player is stopped.

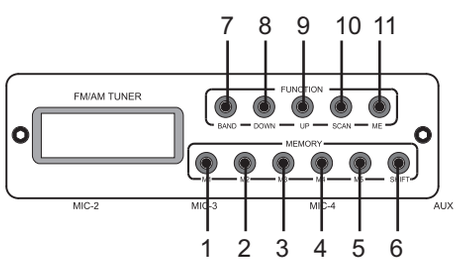


1. CD display
2. Repeat key
3. Random key
4. Program key
5. CD Power ON/OFF key
6. Previous key
7. Next key
8. Play/Pause key
9. Stop/Eject key

Tuner Operation

For FM reception connect a dipole aerial using 75 Ω coaxial to the socket at the rear of the unit. Connect the supplied antenna to the AM spring loaded terminals.

1. Select TUNER mode with the LINE select switch.
2. Select AM or FM with the BAND key.
3. Use the UP/DOWN keys to set a frequency manually or the Scan key to automatically search for the desired station.
4. To program a station press the Memory key.
5. Press a memory key (M1 to M5) or Shift key and Memory key (M6 to M10) to store a frequency.



1. M1 (Memory key)
2. M2 (Memory key)
3. M3 (Memory key)
4. M4 (Memory key)
5. M5 (Memory key)
6. Shift key
7. Band select key
8. Down key
9. Up key
10. Scan key
11. ME key

Device Functions
- Rearside -

- 115V and 230V Mains Connection
- 24V Battery Connection
- 100V/8Ω Speaker Output
- Aerial Connection
- LINE OUT
- LINE IN
- Priorities
- Telephone Input
- Chime
- MONITOR OUTPUT
- Top view of all functions

115V and 230V Mains Connection

Selector to adapt the mains connection

24V Battery Supply

Connection to UPS

100V/8ohm Speaker Output

Terminal for 100V/8ohm - speakers

Aerial Connection

Connection of FM an AM Antennas

LINE OUT

Connecting an additonal amplifier

LINE IN AUX

Terminal for LINE IN devices (CD/AUX)

Priorities

Effects of different Priority Statuses

Telephone Input

Using the Tel. input for emergency announcements

Chime

Activating a attention signal preceding a call

MONITOR OUTPUT

Connection of monitor devices (for tracing)

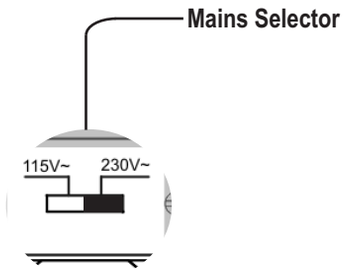
Top view of all functions

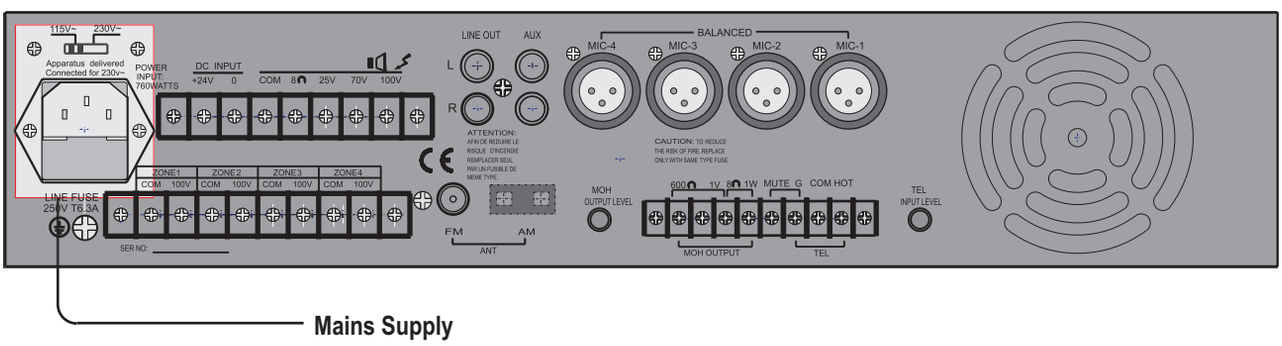
Diagram connected with all possible devices

Device Functions
- Rearside -

115V and 230V Mains Connection

The amplifier is factory set at 230 V(AC) mains voltage. The Mains Selector is at the Rearside of the Mixing Amplifier.
You can set the switch to 115V if neccessary by pushing the slide switch from right to left.
A before please disconnect the mains cable.
Ensure yourself that the device is set to the local mains voltage before you connect it.



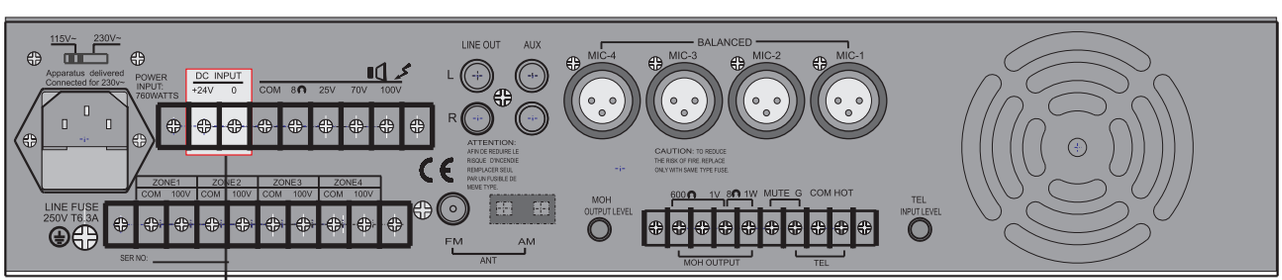


Mains Supply

24V-Battery Supply

You can also drive the device with 24V(AC).
This is useful in case your mains connection is broken down and you can bypass this with an uninteruptible power supply (UPS).
In this case no manual switching is interruped at the amplifier. As soon the mains connection, the device is automatically driven by external battery power, regardless to the position of the ON/OFF-switch.

Electrical stability of the system is increased by earthing the case.



24V-Battery Supply / UPS Connection

Device Functions
- Rearside -

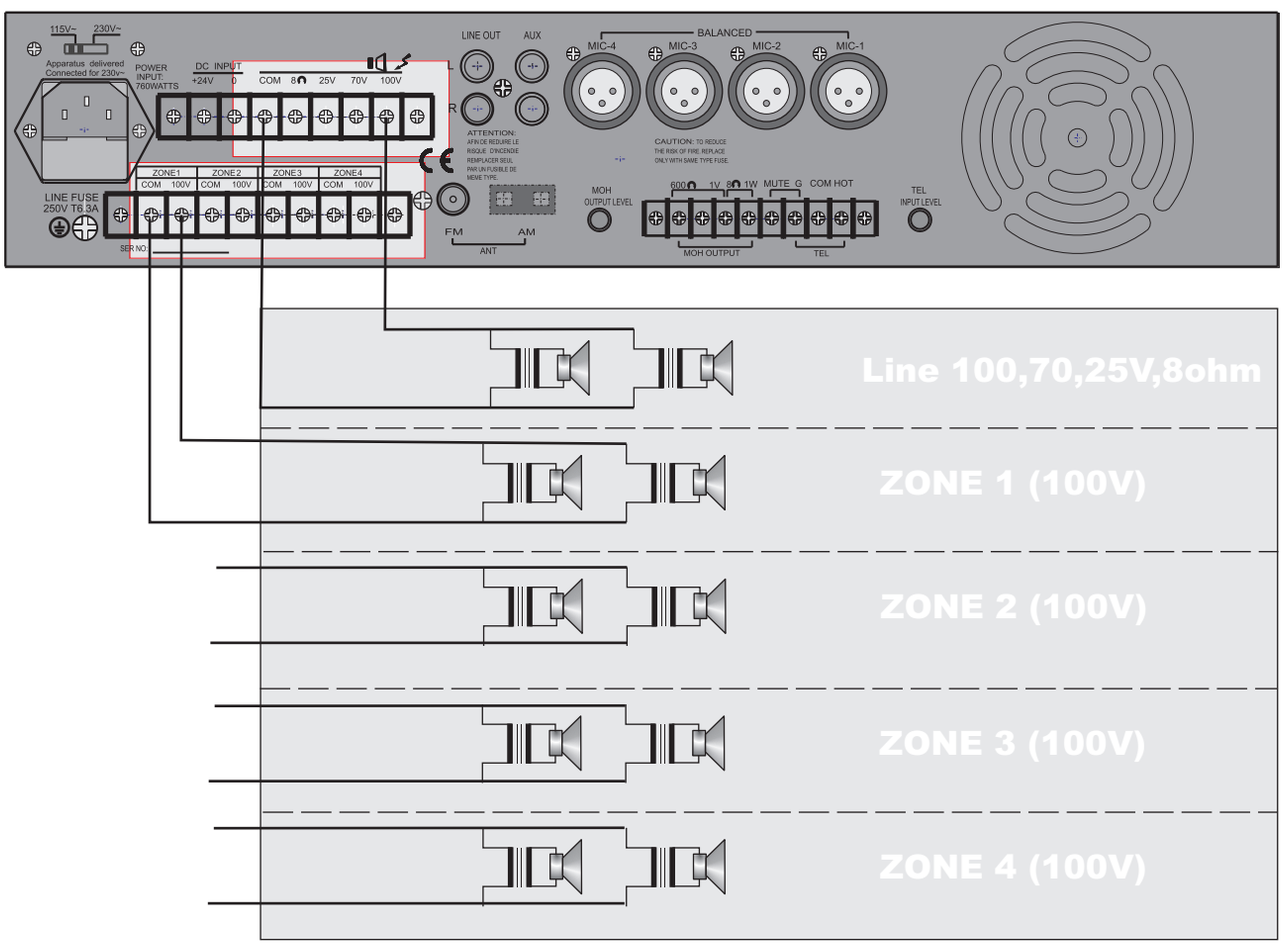
100V Speaker Output

The amplifier provides four different 100V Loudspeaker Zones . Additionally you can connect the Loudspeakers with one 25V and one 70V Zone.

- The 100V - Output reproduces all signals processed by the Mixing Amplifer operated in the standard mode.

8ohm Speaker Output

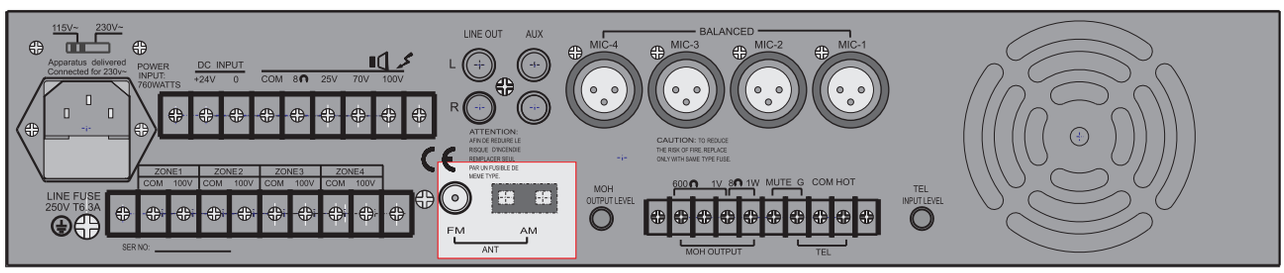
This output allows connection of standard low impedance loudspeakers. The minimum load impedance must be 8ohm. When two or more loudspeakers are connected, ensure that they are wired in such a way, that the load impedance is between 8ohm and 16ohm.



Device Functions
- Rearside -

Aerial Connection

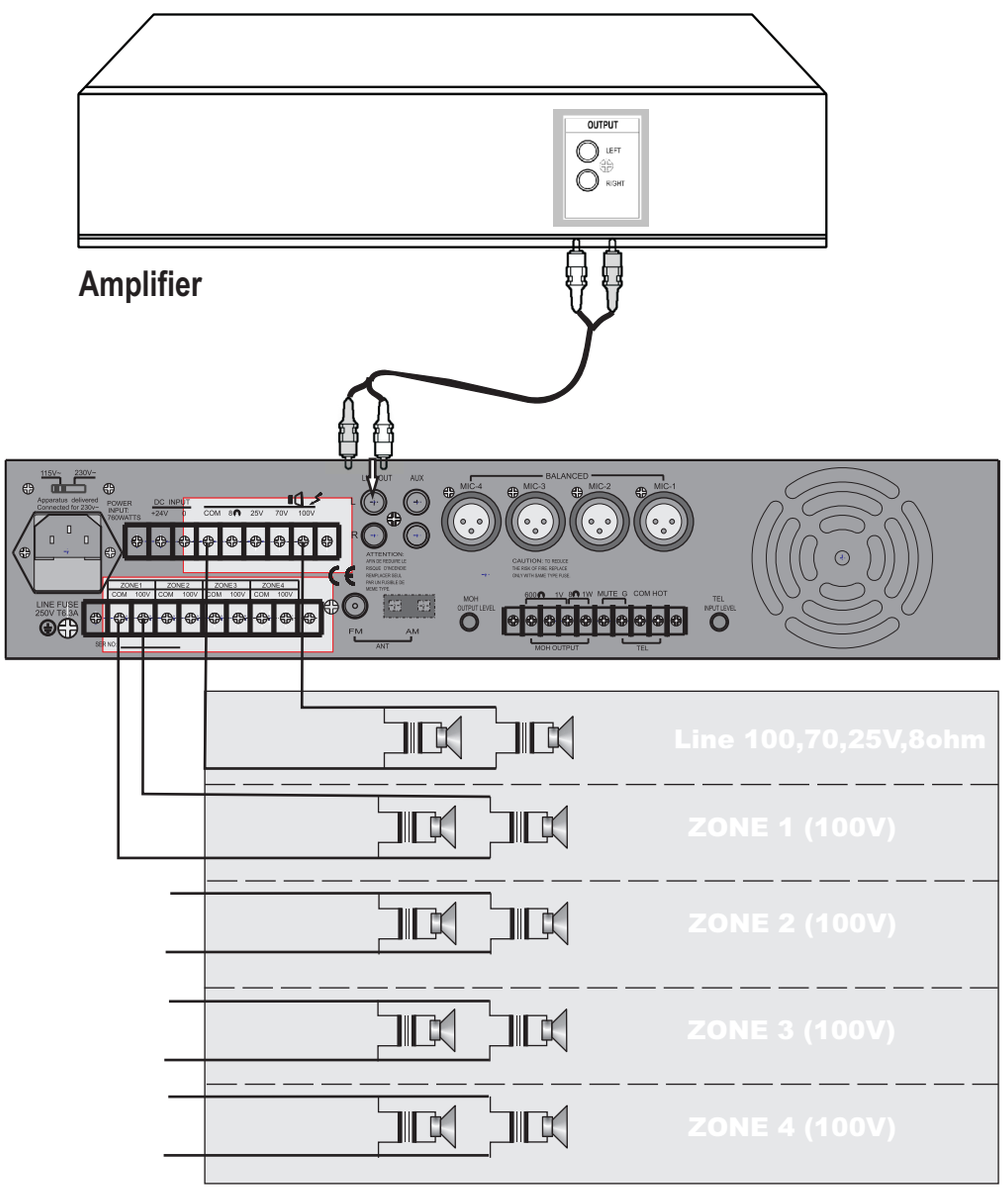
The **MT-AMP 240** provides the possibility to connect two antennas (FM and AM) at the rearside of the gear. The connection can be done by the AM-clamps oder the FM jacket.



Device Functions
- Rearside -

LINE Out

These standard RCA phono sockets provide a mixed output suitable for connection to a amplifier.

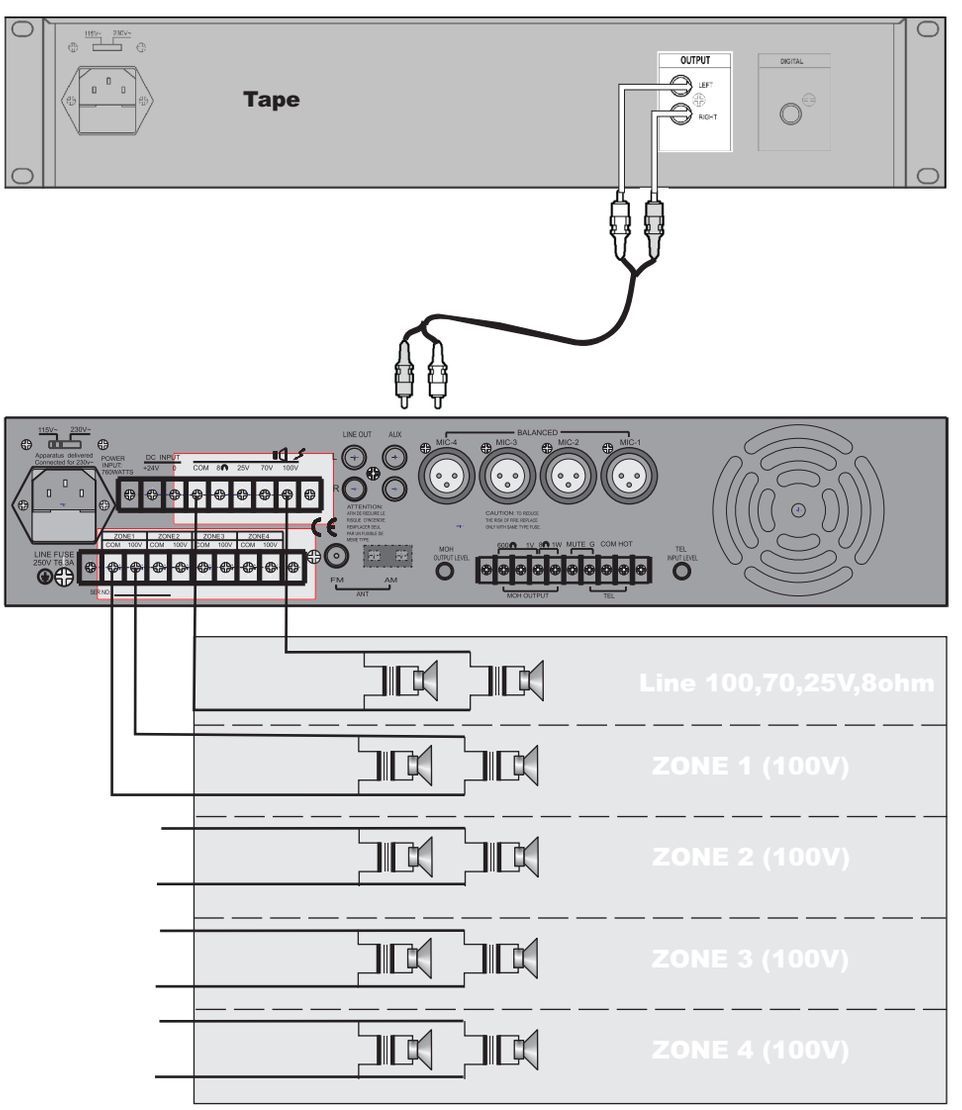


Device Functions
- Rearside -

LINE IN (CD/AUX)

The equipment provides an auxiliary input which may be used for connecting other signal sources such as a CD or Cassette player. A slide switch is located on the front panel for selection of, Aux and CD. The line level control operates on each of the input sources. To operate select the desired music source using the slide switch and turn the "Line" control clockwise to increase the volume or anticlockwise to reduce the volume.

The AUX/CD input sockets are standard RCA phono, two sockets are supplied and these are linked together internally, this allows stereo signal source to be used without the need to obtain a special lead, however you may wish to check with the manufacturer of the signal source to ensure that no damage will result if the left and right output channels are put in parallel.



Device Functions
- Rearside -

Microphone input with XLR-Jack

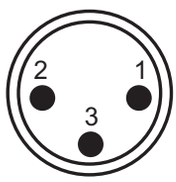
Mic 1 input is either a balanced standard 1/4” stereo jack on front panel or XLR on the rear panel (with selectable phantom power). Mic1 input has VOX priority which will be override Mic2-4 and AUX (LINE) input signals but not the Telephone input. Mic2-4 inputs are XLR with selectable phantom power located on the rear panel.

The phantom power is factory set off and can be enabled as follows:

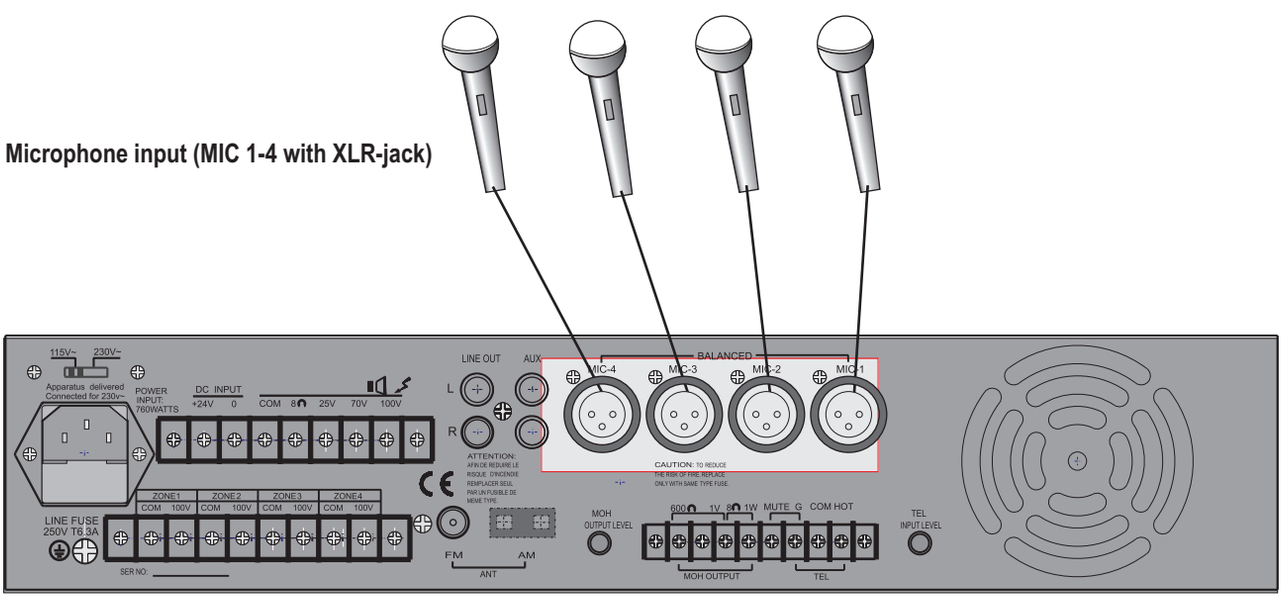
1. Remove power lead from the AC wall socket.
2. Remove top cover.
3. Locate the link pins (marked jump 1,2,3&4) on the PCB behind each microphone XLR input socket.
4. Connect shorting plug to the centre pin and ON position to enable the Phantom power.

XLR-Input

1: SCREEN
2: HOT
3: COLD



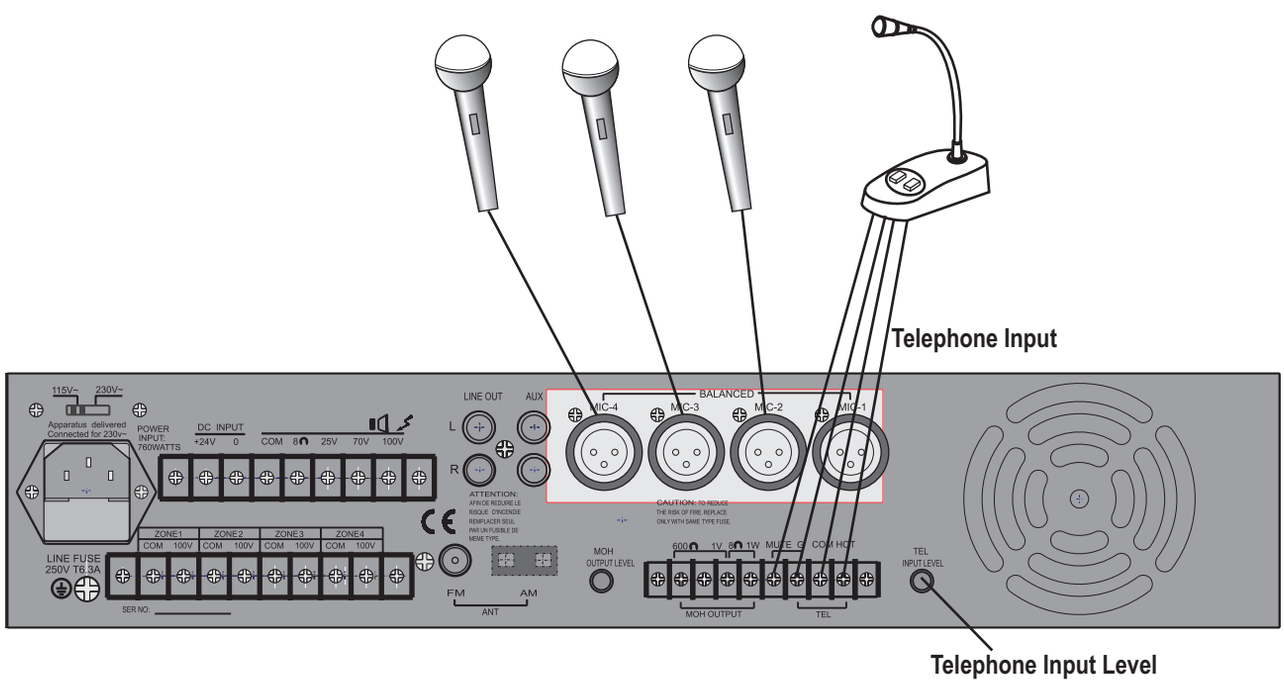
Microphone input (MIC 1-4 with XLR-jack)



Device Functions
- Rearside -

Telephone Input

This input is for emergency announcements / signals and is not effected by the Master Control. The input level can be set by rotary control on the rear panel. The TEL input has the highest priority and will override all other inputs.



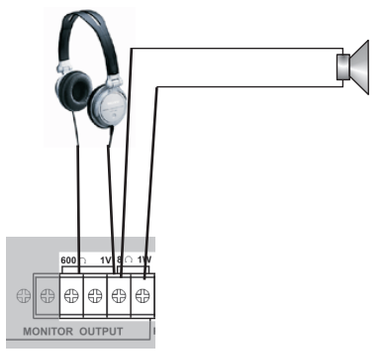
Chime

Switching the manual muting terminals on the rear panel will activate the chime function (”DING-DONG” attention signal preceding a call).

The default volume of the chime is pre-set at the factory and is adequate for most applications.

Device Functions
- Rearside -

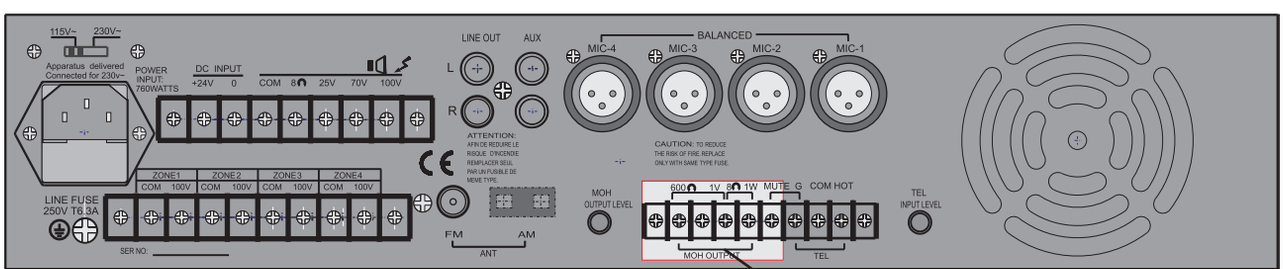
MONITOR OUTPUT



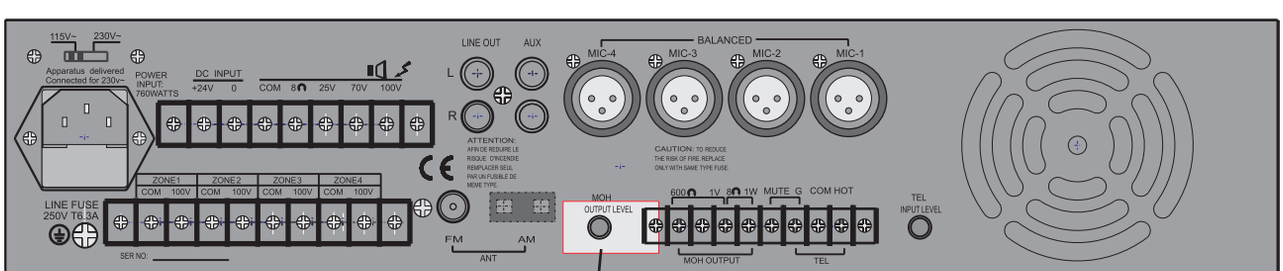
If the loudspeaker zone is not in the same room as the amplifier you can supervise the output with the connectors on the terminal strip marked as MONITOR OUTPUT.

There are several options.

1. Connection of an ear phone
   at the terminal output 600Ω and 1V.
2. Connection of a speakers
   at the terminal output 8Ω and 1W.



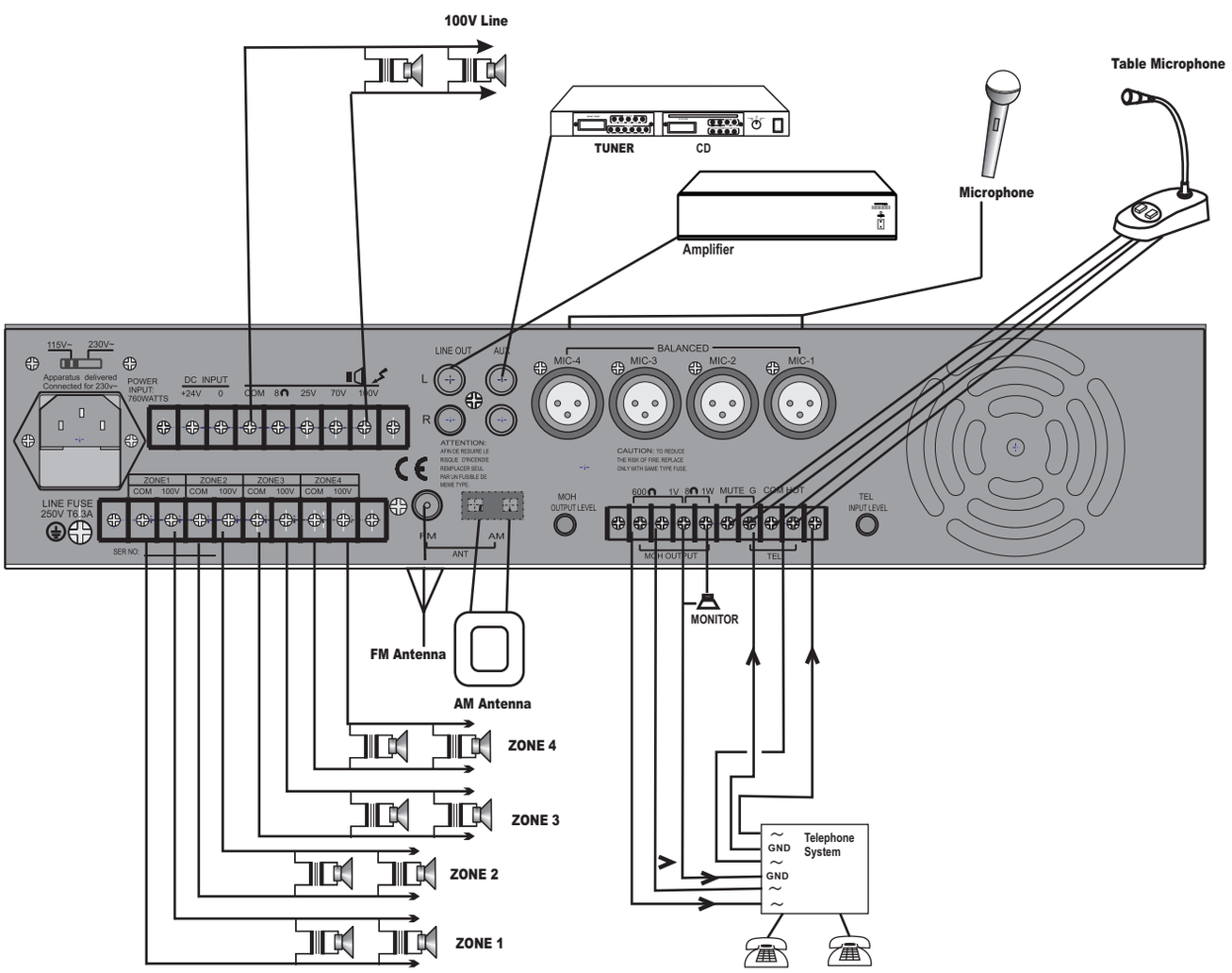
MONITOR OUTPUT



Volume Control MONITOR OUTPUT

Device Functions
- Rearside -

Top view of all functions



Further Information

- Technical Specifications
- Block Plugging Diagramm
- Index

Technical Specifications

Containing all technical specifications

Block Plugging Diagram

Circuit construction

Index

Content in alphabetical order

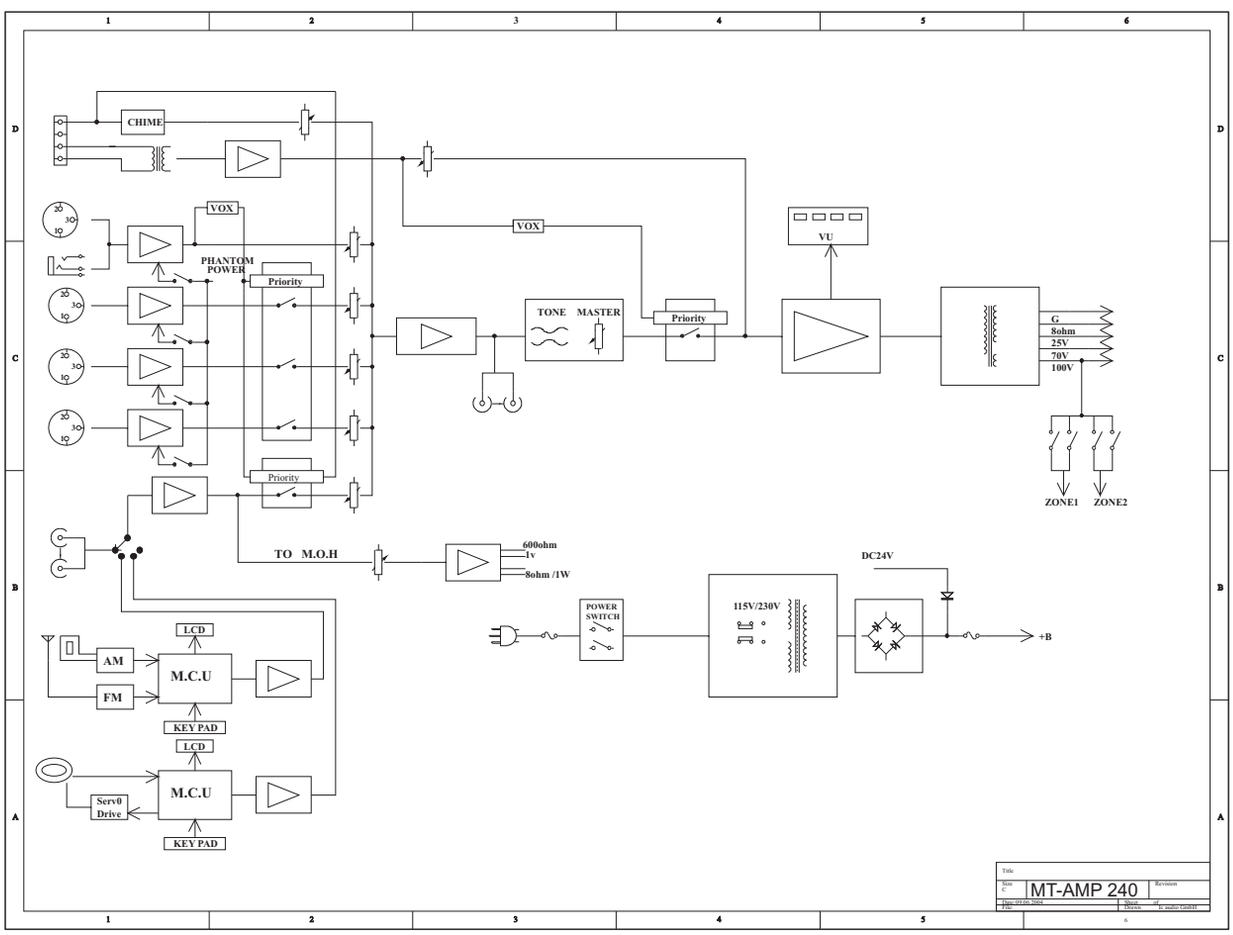
Further Information

Technical Specifications

Type		**Mixer Amplifier**
Model		**MT-AMP 240**
Supply	**Mains Voltage**	AC 115V / 230V , 50 / 60Hz ± 10% selectable
	Battery Voltage	DC 24V (Max 10% deviation)
Output power Max:		360W
Rated:		240W
Outputs		SPEAKER OUTPUTS: MUSIC/SPEECH: 8ohm, 25V, 70V, 100V selectable LINE OUT: 600ohm, 1V MOH OUTPUT: 8ohm 1 watt / 600ohm,1V balanced.
Inputs		MIC 1: 250ohm, 1mV, symmetric with phantom power selectable. (JUMP1). MIC 2: 250ohm, 1mV, symmetric with phantom power selectable. (JUMP1). MIC 3: 250ohm, 1mV, symmetric with phantom power selectable. (JUMP1). MIC 4: 250ohm, 1mV, symmetric with phantom power selectable. (JUMP1). AUX: 200mV,47Kohm, unbalanced TEL : 0.1~1V,600ohm, adjustable, balanced
Frequency response		MIC1~MIC4: 60Hz ~ 15KHz ± 3dB
Total harmonic distortion		Less than1% at 1KHz, rated power
Signal to noise ratio		All VOLUME CONTROLS C.C.W. : 75dB below rated power MIC1 ~ 4 : 60dB below rated power TEL : 70dB below rated power LINE (AUX/CD) : 70dB below rated power
Tone controls		BASS : +/- 10dB at 100Hz TREBLE: +/-10dB at 10KHz
Controls		MIC1~MIC4 volume control LINE (AUX/Tuner/Cassette/CD) volume control MASTER volume control TEL input level control MOH output level control TONE controls (Bass,Treble) Zone 1 , Zone 2 Button AC 115V / 230V voltage selector switch
Indicators		Power indicator (LED),output level indicators (3 LEDS)
AC power consumption		760 watts
DC power consumption		16A
Chime		TWO TONE CHIME (Ding-dong attention signal preceding a call).
Priority		PRIORITY LEVEL (Using for MIC1~4) TEL / EMER MIC1 MIC2 MIC3 MIC4 AUX/CD 3 2 1 1 1 1
Dimensions (H x W x D)		Desktop: 88 x 430 x 300 mm / 19” Rack: 88 x 430 x 385 mm
Weight		MT-AMP 240: app. 13kg
Colour		Black
		Desktop
Optional Modules		CD-2: CD-Player, TM-2: AM/FM Digital Tuner Unit,
		Desktop

Further Information

Block Plugging Diagram



INDEX

A
Alerting 22
Alarm Function 7

B
Bass and Treble Controller 12
Battery Connection 15
Block Plugging Diagram 26

C
CD-Player 13
Cooling 6
Chime 21

D
Desktop-Mounting 6

I
Inputs 7

L
LED-Display 9
LINE- Inputs 10

M
Master Controller 12
Microphone Inputs 19
Microphone Controller 11
MONITOR OUTPUT 22
Mains Connection 15

O
ON/OFF - Switch 9
Outputs 7

P
Priorities 20

S
Speaker Output 16
Safety Instructions 5

T
Technical Specifications 25
Telephone input 21
Top view of all functions 23
Tuner 13

U
Unpacking 5

Z
Zoning 9

... to make people listen

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